

EFFECT OF DIFFERENT SOURCES OF NUTRIENTS ON PRODUCTIVITY AND QUALITY OF ONION (*ALLIUM CEPA* L.)

Bhavana Dhaker*¹, B.G. Chhipa² and R.S. Rathore³

Department of Horticulture, College of Agriculture, Career Point University, Kota, Rajasthan

² *(Horticulture), Directorate of Research, MPUAT, Udaipur*

³ *(Horticulture), Department of Horticulture, RCA, Udaipur*

Email: bhavanadhaker11@gmail.com

Received-05.07.2018, Revised-23.07.2018

Abstract: A field experiment was conducted during *Rabi* season 2016-17 to find out the effect of FYM and Vermi Compost with or without PSB and Azotobacter and rates of organic manures (50% and 100% RND) on growth attributes and yield parameters of onion (Agri found dark red) on a clay loam soil. The treatments comprised of organic, inorganic fertilizer and biofertilizers with ten treatments 100% RDF through inorganic, 100% RDF through FYM (N Basis), 100% RDF through vermicompost, 50% RDF through Inorganic Fertilizers + 50 % through FYM, 50% RDF through Inorganic Fertilizers + 50 % through vermicompost, 50% RDF through Inorganic Fertilizers + 50 % through FYM + PSB, 50% RDF through Inorganic Fertilizers + 50 % through vermicompost + PSB, 50% RDF through Inorganic Fertilizers + 25 % vermicompost + PSB, 100% RDF through FYM (N Basis) + PSB + *Azotobacter* and 100% RDF through vermicompost + PSB + *Azotobacter*. Results revealed that the application of organic manure significantly influenced the plant height (cm), number of leaves, fresh weight of leaves (g plant⁻¹) and dry weight of leaves (g plant⁻¹), diameter of bulb (cm), bulb weight (g), bulb yield (q ha⁻¹), total soluble solid (°B) and allyl propyl content (ppm) significantly increased with 100% RDF through Vermicompost + PSB + *Azotobacter*. were significantly influenced with 100% RDF through Vermicompost + PSB + *Azotobacter* at 30 and 60 days of transplanting. Application of 100% RDF applied through vermicompost + PSB + *Azotobacter* (T₁₀) recorded maximum gross returns, net return and cost benefit ratio of onion crop.

Keywords: FYM, Growth, Onion, Vermicompost, Yield

REFERENCES

Anonymous (2013). *Indian Horticulture Database-2013*, National Horticulture Board, Ministry of Agriculture, Govt. of India, Guragaon, pp. 267.

Bhuma, M. (2001). Studies on the impact of humic acid on sustenance of soil fertility and productivity of greengram (VBNGG-2). *M. Sc. (Agri.) Thesis*, Tamil Nadu Agricultural University, Coimbatore (India).

Choudhary, B. R., Fageria, M. S. and Dhaka, R. S. (2002). Role of growth hormones in chillies – A review. *Agric. Rev.*, 23(2): 145-148.

Gurjar, Jitendra Singh, Singh, S. S., Nagaich, K. N., Gurjar, P. K. S. and Singh, Lal. Effect of planting methods, organic, nutrient sources and bio-fertilizers on bulb yield and quality of Kharif onion (*ALLIUM CEPA* L.) *Plant Archives* Vol. 17 No. 1, 2017 pp. 439-444 ISSN 0972-5210

Jawadagi, R.S., Basavaraj, N., Patil, B.N., Naik, B.H. and Channappagoudar, B.B. (2012). Effect of different sources of nutrients on growth, yield and quality of onion (*Allium cepa* L.). *Karnataka Journal of Agricultural Sciences*. 25 (2): 232-235.

Mahantesh, B., Venkatesha, J., Thippesha, D., Poornima, G. and Umesh, K. (2005). Effect of

bio-fertilizers with levels of NPK on growth and yield of onion (*Allium cepa* L.) cv. Bellary Red grown under irrigated condition in central dry zone of Karnataka. *Karnataka Journal of Horticulture*. 1 (3): 70-75.

Panse, V. G. and Sukhatme, P. V. (1967). *Statistical Methods for Agricultural Workers*, Indian Council of Agricultural Research Publication, New Delhi, pp.152-174.

Prabhakar, M., Hebbar, S.S. and Nair, A.K. (2012). Effect of organic farming practices on growth, yield and quality of rose onion (*Allium cepa*). *Indian Journal of Agricultural Sciences*. 82 (6): 500-503.

Singh, Abhishek, Ram, R. B. and Meena, M. L. (2015). Efficacy of different sources of nutrients and biofertilizers on growth yield quality of onion. *International Research Journal of Natural and Applied Sciences*, 2(10) : 64-70.

Shinde, K.G., Kadam, J.M., Bhalekar, M.N. and Pawar, P.K. (2013). Effect of organic, inorganic and biofertilizers on uptake of nutrients by onion (*Allium cepa* L.) grown under western Maharashtra conditions. *Journal of Agriculture Research and Technology*. 38 (2): 192-195.

*Corresponding Author